Flight Report
Operation Ice Bridge Spring 2012

UAF Alaska Flight No 5
Mission Plan: St. Elias Range

Flight Report Summary

Aircraft	**DHC-3 Otter**
Flight Number	DHC3-5
Flight Request	12M014
Flight Hours	8.4
Take off time	19:13 Z from Ultima Thule
Landing time	03:39 Z at Ultima Thule (with fuel stops at Yakutat)
Date	March 21, 2012
Purpose of Flight	LiDAR and radar surveys of glaciers within the St. Elias Range, Alaska.
Aircraft Status	Airworthy.
Sensor Status	operational.
Significant Issues	none.
Accomplishments	• Radar bed mapping of Logan, Hubbard, Yakutat, Novatak, Malaspina and Yahtse Glaciers • LiDAR centerline profiles and cross profiles of Logan, Hubbard, Yakutat, Novatak, Malaspina and Yahtse Glaciers. • Conducted two passes over runway at Yakutat airport for LiDAR instrument calibration. • DMS photogrammetry of Logan, Hubbard and Yahtse.

Science Data Report Summary

This mission performed LiDAR surveys and radar bed mapping of glaciers within the St. Elias Range, Alaska.
Geographic keywords: (St Elias Range, Alaska)
Repeat Mission: yes

Instrument	Instrument Operational		Data Volume	Instrument Issues
	Target area	Entire Flight		
UAF LiDAR	Yes	YES	2.4 GB	None
GPS	Yes	YES	50 MB	None
IMU	Yes	Yes	1 GB	None
JPL Warm Ice Sounding Explorer (WISE) radar	yes	Just over the glaciers	20 GB	None

Mission Log (Chris Larsen)

Weather conditions were great, light winds with only occasional low lying clouds on the glaciers. The morning was cold, with -30° F temperatures at the start. The flight began up the Logan Glacier to the divide with the upper Hubbard. Bed returns from the radar were sparse over the upper reaches, but very clear on the lower reaches of both glaciers. The lower Hubbard, below the throat, was very well bed mapped with a grid pattern of cross sections. After a fuel stop in Yakutat, we recorded many clear bed returns from the radar over the Yakutat Glacier and neighboring Novatak Glacier. From there, we returned to Yakutat for fuel, then across the Malaspina piedmont lobe to Icy Bay. The Malaspina also yielded excellent bed returns, but Icy Bay's Yahtse Glacier proved very challenging for the radar. After some unsuccessful attempts to image the bed there, we returned to our remote base of operations at Ultima Thule.

Individual instruments on board the aircraft:

LiDAR: The UAF LiDAR system worked well.

GPS: System worked normally. No problems.

Warm Ice Sounding Explorer (WISE) radar: System worked great.

IMU: System worked well. No issues.

DMS: System worked well. No issues.